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23373	7590	08/08/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			AUSTIN, MELISSA J	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/631,894

Applicant(s)

USHIRO ET AL.

Examiner

Melissa Austin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 25-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-59 is/are rejected.
- 7) ☒ Claim(s) 31 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All. b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 23 May 2005 has been entered. Claims 25-59 are now pending.

#### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Drawings***

3. The drawings received 30 December 2004 are acceptable for examination purposes.

#### ***Claim Objections***

4. Claim 31 is objected to because of the following informalities: the claim is punctuated with a comma instead of a period. Appropriate correction is required.

5. Claim 37 objected to because of the following informalities: "port" is misspelled. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 26 recites the limitation "the keyboard" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 29, 30, 33-36, 41, 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Prasad et al. (US 2003/0082427). Prasad discloses a fuel supply removably coupled to a fuel cell to power a portable electronic device. The fuel supply includes a fuel storage area enclosed by a first flexible inner container (applicant's flexible sheet member). The first flexible inner container is positioned within the interior of an outer container (applicant's casing). Fuel solution is passed from the fuel storage area to the fuel cell through a fuel solution outlet (applicant's fuel supply port) positioned at the opening of the first flexible inner container. The outer container also includes a waste inlet (applicant's discharged-solution recovery port) for feeding waste into the

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waste storage area. The waste storage area may be bounded by a second flexible inner container or by the casing alone. The fuel solution outlet and waste inlet are configured to be connected to a receptacle allowing for the transfer of fluids between the fuel supply and the fuel cell. An absorbent material (applicant's desiccant) may be placed within the waste storage area or the outer container. The fuel solution outlet and waste inlet ports face the same direction. (Pg. 1, [0020] – Pg. 3, [0036]; Figures 2, 3, 10-12).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427), as evidenced by Ohtani (U.S. Patent No. 6,118,949) and Peterson et al. (U.S. Patent No. 3,439,596), in view of Shioya (U.S. Patent No. 6,916,565). Prasad discloses portable electronic devices powered by fuel cells. A fuel supply system includes a fuel storing section formed by a flexible sheet member and a fuel supply port detachably connected to the supply port of the fuel electrode of the fuel cell. (Pg. 1, [0020] – Pg. 2, [0027]). However, Prasad fails to disclose a secondary cell or the fuel cell system disposed at a side of a lens of a camera. Shioya teaches a power supply system in which a secondary cell is charged by a fuel cell in order to prevent wasteful discharge of energy produced and to improve

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energy utilization. (Col. 5, ll. 31-35; Col. 22, ll. 35-50; Fig. 12). Therefore, one of ordinary skill in the art at the time the invention was made would have provided a secondary cell as taught by Shioya in the fuel cell system as taught by Prasad in order to improve energy utilization. Although not specifically stated, one of ordinary skill in the art would find it obvious that Prasad's "portable electronic devices" would encompass an analog or digital camera and that placement of the power supply system of a camera at a side of the lens is conventional (see 6,118,949 Figure 4 and 3,439,596 Figure 3).

12. Claims 26 and 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427), in view of Shioya (U.S. Patent No. 6,916,565), and further in view of Lonka (U.S. Patent No. 6,308,084). Prasad discloses portable electronic devices powered by fuel cells. A fuel supply system includes a fuel storing section formed by a flexible sheet member and a fuel supply port detachably connected to the supply port of the fuel electrode of the fuel cell. (Pg. 1, [0020] – Pg. 2, [0027]). However, Prasad fails to disclose a secondary cell or the fuel cell system disposed at a portion of a portable telephone that includes a keyboard. Shioya teaches a power supply system in which a secondary cell is charged by a fuel cell in order to prevent wasteful discharge of energy produced and to improve energy utilization. (Col. 5, ll. 31-35; Col. 22, ll. 35-50; Fig. 12). Therefore, one of ordinary skill in the art at the time the invention was made would have provided a secondary cell as taught by Shioya in the fuel cell system as taught by Prasad in order to improve energy utilization. One of ordinary skill in the art at the time the invention was made would find it obvious that Prasad's "portable electronic devices" would encompass a portable

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telephone even though it is not specifically stated; the artisan would also recognize that the conventional placement of a power supply in a portable phone is behind the keypad. Lonka teaches a mobile communications device with a camera and keypad and a power supply system disposed in the part of the phone that includes the keypad. This placement creates a center of gravity as low as possible to make photographing easier in the vertical position. (Figures 1A, 1B, 2A, 2B; Col. 2). This phone with camera provides the functionality of two electronic devices in one package. Therefore, one of ordinary skill in the art at the time the invention was made would have used the fuel cell system as taught by Prasad and Shioya together in a portable phone with a camera as taught by Lonka in order to provide the convenience of two devices in one package with the power supply positioned such that the center of gravity is proper for use of the device.

13. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427), in view of Shioya (U.S. Patent No. 6,916,565). Prasad discloses portable electronic devices (specifically personal digital assistants, palm devices, laptop computer) powered by fuel cells. A fuel supply system includes a fuel storing section formed by a flexible sheet member and a fuel supply port detachably connected to the supply port of the fuel electrode of the fuel cell. (Fig. 1; Pg. 1, [0020] – Pg. 2, [0027]). However, Prasad fails to disclose a secondary cell. Shioya teaches a power supply system in which a secondary cell is charged by a fuel cell in order to prevent wasteful discharge of energy produced and to improve energy utilization. (Col. 5, ll. 31-35; Col. 22, ll. 35-50; Fig. 12). Therefore, one of ordinary skill in

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the art at the time the invention was made would have provided a secondary cell as taught by Shioya in the fuel cell system as taught by Prasad in order to improve energy utilization.

14. Claims 31, 32, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427) in view of Faris et al. (U.S. Patent No. 6,558,825). Prasad teaches the fuel pack of claim 35 as discussed in the previous 35 U.S.C. 102 rejection; however, Prasad fails to disclose a fuel pack with fuel supply port and discharged-solution supply ports facing opposite directions or the flexible sheet fixed to opposing inner surfaces of the fuel pack. Faris teaches a reservoir container for supplying fuel and collecting reaction products to and from fuel cells. This reservoir container is a flexible vessel with a fixed partition defining the chambers for fuel and waste. Fittings for connection to the fluid circuit (applicant's ports) are provided at opposite sides of the reservoir. (Col. 2, ll. 61-65; Col. 8, ll. 7-36; Col. 10, ll. 45-64; Fig. 4). This would reduce the chance of the mistakenly connecting the port to the wrong electrode and further separate openings in the system where crossover may occur. Therefore, one of ordinary skill in the art at the time the invention was made would have placed the ports facing opposite directions and a fixed partition for defining the sections as taught by Faris in the fuel cell system as taught by Prasad in order to reduce the chance of mistakenly connecting the fuel port to the air electrode and the discharge port to the fuel electrode (which would flood/damage the fuel cell) and prevent intermixing of the fuel and discharged-solution.



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15. Claims 38, 39, and 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427) in view of Lawrence et al. (U.S. Pre-grant Publication No. 2002/0197522). Prasad teaches the fuel pack of claim 35 as discussed in the above 35 U.S.C. 102 rejection; however, Prasad does not disclose opening portions of the discharged-solution and fuel bas being detachably attached to their respective ports. Lawrence teaches that in operation and use, a user will insert a removable fuel cartridge (applicant's fuel pack) into a fuel cell assembly. Once fuel is depleted from the fuel cartridge, the cartridge is disengaged and a fresh cartridge is used to replace the used cartridge. Such a replaceable fuel cartridge provides quick and convenient refueling. (Pg. 6, [0083]; Pg. 2, [0015-0016]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a removable/replaceable fuel cartridge as taught by Lawrence with the structure as taught by Prasad in order to provides quick and convenient refueling.

16. Claims 43, 44, 49, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427) in view of Bateman (U.S. Patent No. 5,909,818). Prasad discloses a fuel supply removably coupled to a fuel cell to power a portable electronic device. The fuel supply includes a fuel storage area enclosed by a first flexible inner container (applicant's flexible sheet member). The first flexible inner container is positioned within the interior of an outer container (applicant's casing). Fuel solution, which may be methanol, is passed from the fuel storage area to the fuel cell through a fuel solution outlet (applicant's fuel supply port) positioned at the opening of the first flexible inner container. The outer container

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also includes a waste inlet (applicant's discharged-solution recovery port) for feeding waste into the waste storage area. The waste storage area may be bounded by a second flexible inner container or by the casing alone. The fuel solution outlet and waste inlet are configured to be connected to a receptacle allowing for the transfer of fluids between the fuel supply and the fuel cell. (Pg. 1, [0020] – Pg. 3, [0036]; Figures 2, 3, 10-12). However, Prasad does not teach an antifreezing agent placed in the waste storage section. Bateman teaches the addition of antifreeze to a water storage tank so that the water does not freeze. While Bateman's water storage tank is not used in conjunction with a fuel cell, the addition of antifreeze to the tank serves the same purpose as applicant's admitted purpose, that is, to prevent freezing of water in storage and, as such, is considered analogous art. Therefore, one of ordinary skill in the art at the time the invention was made would have included an antifreezing agent as taught by Bateman in the waste storage section of the fuel pack as taught by Prasad in order to prevent the water from freezing.

17. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427) in view of Bateman (U.S. Patent No. 5,909,818) and further in view of Faris et al. (U.S. Patent No. 6,558,825). Prasad and Bateman together teach the elements of claim 43 as discussed in the previous 35 U.S.C. 103 rejection; however, neither reference teaches a fuel pack with fuel supply port and discharged-solution supply ports facing opposite directions. Faris teaches a reservoir container for supplying fuel and collecting reaction products to and from fuel cells. This reservoir container is a flexible vessel with a fixed partition defining the

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chambers for fuel and waste. Fittings for connection to the fluid circuit (applicant's ports) are provided at opposite sides of the reservoir. (Col. 2, ll. 61-65; Col. 8, ll. 7-36; Col. 10, ll. 45-64; Fig. 4). This would reduce the chance of the mistakenly connecting the port to the wrong electrode and further separate openings in the system where crossover may occur. Therefore, one of ordinary skill in the art at the time the invention was made would have placed the ports facing opposite directions as taught by Faris in the fuel cell system as taught by Prasad in order to reduce the chance of mistakenly connecting the fuel port to the air electrode and the discharge port to the fuel electrode (which would flood/damage the fuel cell).

18. Claims 46, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427) in view of Bateman (U.S. Patent No. 5,909,818) and further in view of Lawrence et al. (U.S. Pre-grant Publication No. 2002/0197522). Prasad and Bateman together teach the fuel pack of claim 43 as discussed in the above 35 U.S.C. 103 rejection; however, neither Prasad nor Bateman disclose opening portions of the discharged-solution and fuel bas being detachably attached to their respective ports. Lawrence teaches that in operation and use, a user will insert a removable fuel cartridge (applicant's fuel pack) into a fuel cell assembly. Once fuel is depleted from the fuel cartridge, the cartridge is disengaged and a fresh cartridge is used to replace the used cartridge. Such a replaceable fuel cartridge provides quick and convenient refueling. (Pg. 6, [0083]; Pg. 2, [0015-0016]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a removable/replaceable fuel cartridge as taught by Lawrence with

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the structure as taught by Prasad and Bateman in order to provides quick and convenient refueling.

19. Claims 51, 52, and 55-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427) in view of Shioya (U.S. Patent No. 6,916,565). Prasad discloses a fuel supply removably coupled to a fuel cell to power a portable electronic device. The fuel supply includes a fuel storage area enclosed by a first flexible inner container (applicant's flexible sheet member). The first flexible inner container is positioned within the interior of an outer container (applicant's casing) and made of materials impervious and chemically stable to the fuel, which may be methanol. Fuel solution is passed from the fuel storage area to the fuel cell through a fuel solution outlet (applicant's fuel supply port) positioned at the opening of the first flexible inner container. The outer container also includes a waste inlet (applicant's discharged-solution recovery port) for feeding waste into the waste storage area. The waste storage area may be bounded by a second flexible inner container or by the casing alone. The fuel solution outlet and waste inlet are configured to be connected to a receptacle allowing for the transfer of fluids between the fuel supply and the fuel cell. (Pg. 1, [0020] – Pg. 3, [0036]; Figures 2, 3, 10-12). However, Prasad fails to disclose a secondary cell or the fuel cell system disposed at a side of a lens of a camera. Shioya teaches a power supply system in which a secondary cell is charged by a fuel cell in order to prevent wasteful discharge of energy produced and to improve energy utilization. (Col. 5, ll. 31-35; Col. 22, ll. 35-50; Fig. 12). Therefore, one of ordinary skill in the art at the time the invention was made would have provided a

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secondary cell as taught by Shioya in the fuel cell system as taught by Prasad in order to improve energy utilization.

20. Claims 53 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427) in view of Shioya (U.S. Patent No. 6,916,565) and further in view of Bateman (U.S. Patent No. 5,909,818). Prasad and Shioya together teach the elements of claim 53 as discussed in the previous 35 U.S.C. 103 rejection; however, neither reference teaches an antifreezing agent placed in the discharged-solution storage section. Bateman teaches the addition of antifreeze to a water storage tank so that the water does not freeze. While Bateman's water storage tank is not used in conjunction with a fuel cell, the addition of antifreeze to the tank serves the same purpose as applicant's admitted purpose, that is, to prevent freezing of water in storage and, as such, is considered analogous art. Therefore, one of ordinary skill in the art at the time the invention was made would have included an antifreezing agent as taught by Bateman in the waste storage section of the fuel cell system as taught by Prasad and Shioya in order to prevent the water from freezing.

21. Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427) in view of Shioya (U.S. Patent No. 6,916,565) and further in view of Faris et al. (U.S. Patent No. 6,558,825). Prasad and Shioya together teach the elements of claim 52, as discussed in the previous 35 U.S.C. 103 rejection. Prasad teaches a fuel storing section formed of a bag body, a casing including fuel supply and discharged-solution recovery ports that houses the bag body and forms the discharged solution storage section outside of the fuel bag body (Fig. 12).

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However, neither reference teaches a flexible casing. Faris teaches a reservoir container for supplying fuel and collecting reaction products to and from fuel cells. This reservoir container is a flexible vessel with a fixed partition defining the chambers for fuel and waste. This allows for fuel to be force fed from the container to the fuel cell. (Col. 2, ll. 61-65; Col. 10, ll. 45-64; Fig. 4). Therefore, one of ordinary skill in the art at the time the invention was made would have made the casing of the fuel cell system as taught by Prasad flexible as taught by Faris in order to allow for force feeding the reactants to the fuel cell and waste to the storage container.

22. Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (U.S. Pre-grant Publication No. 2003/0082427) in view of Shioya (U.S. Patent No. 6,916,565) and further in view of Faris et al. (U.S. Patent No. 6,558,825). Together, these references teach the elements of claim 58 as discussed in the above 35 U.S.C. 103 rejection. None of the references teach a heating mechanism for heating the discharged-solution storing section or casing. The fuel cell system as taught by Prasad is used in small-scale fuel cell applications, such as portable electronic devices. These type devices are often used outdoors. If the temperature is cold enough to freeze the solution contained in the discharged-solution storing section or casing, the section container or casing could be ruptured by the expansion of the solution upon freezing. It is common in many arts to use heaters to raise the temperature to avoid freezing. Additionally, the proximity of the fuel storage section and the discharged-solution storing section would allow for heat transfer from the discharged-solution to the fuel, bringing the reactant to a temperature closer to the operating temperature of the fuel cell. This

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would result in a more efficient system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a heating mechanism for heating the solution in the discharged-solution storing section or casing in order to keep the discharged solution from freezing and possibly rupturing the container.

### ***Response to Arguments***

23. Applicant's arguments with respect to claims 25-59 have been considered. New grounds of rejection have been presented in light of applicant's amendment canceling claims 1-24 and adding new claims 25-59.

24. Applicant included analysis of the new claims with respect to the prior art of record. Included in this analysis were statements of how certain limitations of the new claims are not anticipated or obvious over the particular references of record.

25. With respect to claims 25-28, Applicant asserts that the Yamamoto reference does not apply to a portable electronic device. While Examiner believes the teaching of Yamamoto to use a secondary battery that is charged by a fuel cell as a backup power source to be applicable to any fuel cell system application regardless of size, the Shioya reference (see above 35 U.S.C. 103 rejections) has been applied.

26. With respect to claims 29-34 and 51-59, Applicant asserts that Prasad's moveable barrier cannot correspond to the "flexible sheet member." It is not Prasad's moveable barrier that corresponds to the "flexible sheet member" but rather the first inner flexible container.

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27. With respect to claims 35-42, Applicant asserts that Prasad's absorbent material cannot correspond to the "desiccant." Examiner directs Applicant to the definition of desiccant in *Academic Press Dictionary of Science and Technology* (any substance or agent that removes moisture).

28. With respect to claims 43-50, Applicant asserts that the use of an antifreezing agent in Bateman's vehicle water storage tank would not motivate one of ordinary skill to modify a fuel cell waste storage device to include an antifreezing agent. However, it would be obvious to one of ordinary skill in the art to use antifreeze in any container when it is undesirable for the fluid it is holding to freeze.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Austin whose telephone number is (571) 272-1247. The examiner can normally be reached on Monday - Thursday, alt. Friday, 7:15 AM - 4:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mja

Melissa Austin  
Patent Examiner  
Art Unit 1745

  
**PATRICK JOSEPH RYAN**  
**SUPERVISORY PATENT EXAMINER**